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SYSTEMATIC STATUS OF THE MASTIFF BAT, *EUMOPS PEROTIS RENATAE* PIRLOT, 1965

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SYSTEMATIC STATUS OF THE MASTIFF BAT, *EUMOPS PEROTIS RENATAE* PIRLOT, 1965

by

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Eumops perotis renatae, décrit par Pirlot en 1965 et élevé au rang d'espèce par le même auteur, est considéré ici comme un synonyme plus récent d'*Eumops perotis perotis* (Schinz, 1821). D'anciennes captures de la grande *Eumops* d'Amérique du Sud sont reconsidérées à la lumière des notions actuelles sur les relations existant entre *Eumops perotis* et *E. trumbulli.*

The mastiff bats of the genus *Eumops* occupy a geographic area from the southewestern United States southward to northern Argentina. Sanborn (1932) reviewed the genus, based on the few specimens then in existence, but no general summary of the systematics and distribution of these bats has since appeared. Unfortunately, the paucity of material presently available still precludes an extensive review of the genus.

Pirlot (1965) described *Eumops perotis renatae* from Cumaná, Sucre, Venezuela, based on an adult female preserved in alchohol. This individual was killed with a slingshot by a small boy on an unknown date in the early 1960's near the municipal stadium in Cumaná. Because of its size and curious character, the bat was taken to the Colegio San José, where a biology teacher, R. P. C. Prieto, preserved it in spirits and placed it in the school's biological collection. It was there that Pirlot discovered the bat. In the exceedingly brief original description, he commented on its large size, in contrast to the species *perotis* as understood by him, and suggested that it possibly represented a distinct species. However, because he had no comparative material at hand, the specimen was provisionally named as a subspecies of *E. perotis.* Later, in a paper on the bats of the upper Amazonian region of Perú, Pirlot (1968 : 89-90) reported a series of 15 specimens of *Eumops,* which he regarded as *perotis* based on a comparison of forearm measurements with those given by Hall and Kelson (1959 : 210) for that species. Because the holotype of *renatae* was markedly larger than

the Peruvian bats thus identified as *perotis,* Pirlot elevated *renatae* to specific status.

While teaching in the Biology Department at the Universidad de Oriente at Cumaná, one of us (Smith) learned that the holotype of *renatae* had been redeposited by Pirlot in the biological collection of the Colegio San José. Sr. Prieto, realizing the value of this specimen, kindly gave it to Smith to be donated to the Museum of Natural History, The University of Kansas, where it was later catalogued as KU 115920. The skull, which was partially broken at the time of collection, has recently been extracted and repaired.

Sanborn (1932) recognized four geographic races of the species *Eumops perotis* as follows : *perotis* (Schinz) of the Amazon basin ; *dabbenei* Thomas from northern Argentina ; *turmbulli* (Thomas), then known only from Para, Brazil ; and *californicus* (Merriam) from southern California, parts of Arizona, and adjacent northern México. Subsequently, Sanborn (1949 : 283-284) accorded specific status to *Eumops trumbulli,* which closely resembles *perotis* except that it is smaller (Table 1 and Fig. 1) and paler in color. This arrangement has been followed recently by Cabrera (1959 : 127) and Husson (1962 : 248-250). The close resemblance of these two spe-

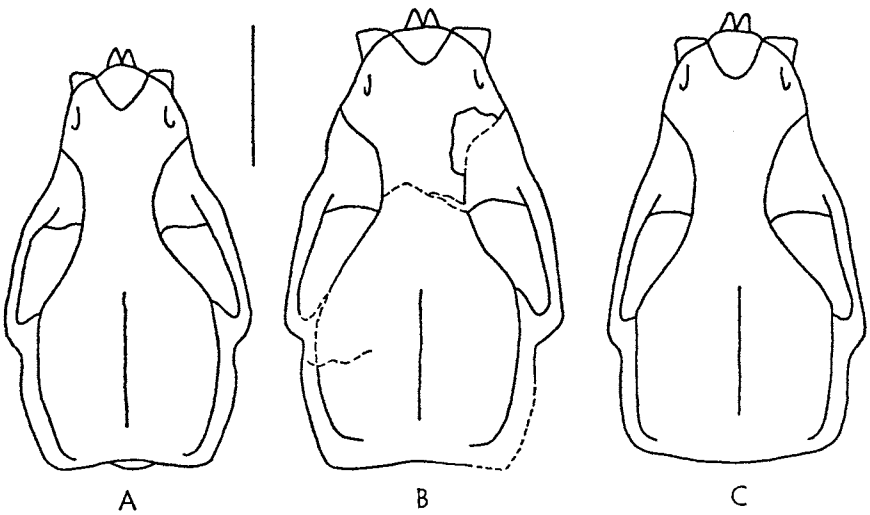

Fig 1. — Crania of *Eumops trumbulli* (A, KU 119178), *Eumops perotis* (B, holotype of *E. p. renatae,* KU 115920), and *Eumops perotis californicus* (C, KU 4706). All specimens shown are females and the dotted lines on the holotype of *renatae* (B) indicate fractures or missing portions of the skull. The vertical line between A and B is 10 millimeters in length.

TABLE 1

Selected external and cranial measurements of *Eumops perotis* and *E. trumbulli*. All measurements are in millimeters. Superscript numbers indicate sample size different from those given in left-hand column

Number and sex	Forearm	Condylobasal length	Zygomatic breadth	Mastoid breadth	Length of max. toothrow	Breadth across canines
			Eumops perotis californicus			
			Silver Creek, 7 1/2 mi. ESE Panoche, 900 ft., San Benito Co., California			
10 ♀	74.9	29.5[11]	17.9[8]	15.3	11.6[14]	7.2[12]
	(73.6-76.0)	(29.0-30.0)	(17.5-18.2)	(14.9-15.8)	(11.2-11.9)	(7.0-7.5)
			Eumops perotis renatae (holotype)			
			Cumaná, Sucre, Venezuela			
1 ♀	82.5	28.6	18.4	15.1	11.8	8.0
			Eumops perotis perotis			
			Cantaura, Anzoategue, Venezuela			
1 ♀	81.0	29.1	18.4	15.1	12.1	—
			Rio Yaracuy, 10 km. NW Urama, 25 m., Carabobo, Venezuela			
1 ♀	79.1	29.4	19.5	16.8	12.1	7.8
			Lagoa Santa, Rio Grande do Sur, Brazil			
1 ♀	82.0	—	—	—	—	8.1
			Rio das Velhas, Brazil			
2 ♂	79.9[1]	30.3, 31.0	18.8, 18.8	15.4, 15.8	12.21	7.91
			Yuto (Jujuy), Argentina			
1 ♂	78.6	30.8	18.5	15.5	12.4	8.0
			Chaco Territory, Argentina (holotype)			
1 ♀	77.8	—	—	—	—	—
			Northern Argentina (from Villa and Villa, 1969)			
2 ♂	78.6, 79.2	32.7, 31.1	19.1, 18.9	15.8, 15.5	12.7, 13.0	8.4, 8.1
1 ♀	77.5	31.6	19.3	16.3	12.2	8.1
			Eumops trumbulli			
			Punto Cropez, Meta, Colombia			
1 ♂	74.0	—	—	—	—	—
3 ♀	70.5					
	(69.7-71.0)	—	—	—	—	—
			Maripa, Bolivar, Venezuela			
1 ♂	69.2	26.7	17.3	14.6	10.8	6.5
2 ♀	69.5[11]					
	(68.0-71.3)	25.7, 26.0	16.31	13.9, 14.3	10.1, 10.3	6.5, 6.7
			Cameta and Mocajuba (Rio Tocantins), Para, Brazil			
4 ♂	71.4				10.9[5]	6.7
	(68.9-72.8)	27.8[1]	16.9, 17.1[2]	14.2[1]	(10.7-11.2)	(6.5-6.9)
7 ♀	70.3	26.5[5]	16.4[6]	14.0[5]	10.7	6.5
	(68.6-71.4)	(26.1-26.8)	(16.1-16.6)	(13.8-14.2)	(10.3-11.0)	(6.1-6.8)

cies was shown also by Brown (1967 : 654), who found *perotis* and *trumbulli* were the only members of the genus that lacked an os penis. Cabrera (1959 : 126-127) placed *Eumops dabbenei* Thomas in synonymy under *E. p. perotis* because material available to him from northern Argentina could not be separated from typical *perotis* from Brazil. Until additional material is available from the critical regions of southern Brazil and northern Argentina, it seems appropriate to follow Cabrera's arrangement.

In order to determine the systematic status of *renatae,* the holotype was compared with available material of *E. perotis.* Because *trumbulli* evidently is more closely related to *perotis* than to any other species of the genus and because the two so closely resemble each other, specimens of *trumbulli* also were studied. Selected cranial and external measurements of most of the material examined are given in Table 1. All measurements are in millimeters.

On the basis of external and cranial measurements *renatae* is clearly a member of the species *Eumops perotis.* The holotype of *renatae* agrees also with specimens of *perotis* as regards color, size and shape of the tragus and antitragus, and size and topography of the dentition. Moreover, the type locality of *renatae* lies within the geographic range of *E. p. perotis* as understood by Cabrera (1959 : 127) and there appears to be no reason to separate the two on the basis of measurements (Table 1) or other external or cranial characters. We therefore place *Eumops perotis renatae* Pirlot, 1965, as a junior synonym of *Eumops perotis perotis* (Schinz, 1821).

At this point, it seems appropriate to comment on the reports of other supposed *perotis* from South America. In the paper on the bats of Perú mentioned above, Pirlot (1968 : 90) gave forearm measurements of the 15 specimens that he identified as *E. perotis* ; the mean and (extremes) of these are for five males, 70.8 (65.7-73.1), and for 10 females, 71.4 (66.4-74.2). Based on these measurements, it seems highly probable to us that these bats are not *perotis,* but rather the smaller *E. trumbulli,* which is known to occur in western South America.

Earlier, de la Puente (1951 : 42-44) had reported two individuals (a subadult male and an adult female) from near Lima, Perú, as *Eumops perotis californicus.* Sanborn (1932 : 351) distinguished the subspecies *californicus* from *E. p. perotis* principally on the

basis of a narrower rostrum of *E. p. californicus* (see Table 1 and Fig. 1). Judging by the published external and cranial measurements, these bats are indeed *perotis*. However, the breadth across the canines and zygomatic breadth (8.5 and 8.4, and 16.9 and 18.2 for male and female, respectively) place these specimens closer to *E. p. perotis* than to *californicus*. The allocation of these two specimens to *californicus* seems to have resulted from comparison with three Brazilian specimens (from the Rio Tocantins, Para) that were identified as *E. p. perotis*, but which clearly fall into the size range of *E. trumbulli*.

In his contribution to the chiropteran fauna of western Ecuador, Brosset (1965 : 223), reported *E. perotis* from Ecuador for the first time, based on two specimens from Guayaquil. One of these, a juvinal male, had a forearm length of 82, which along with several selected cranial measurements clearly places it in the size range of *perotis*. A second adult (sex not given) in the Paris Museum was reported to have a forearm that measured 76. Although, this measurement is at the lower extreme of variation in *perotis*, it seems probable that this specimen is a small female of that species. The largest forearm of *E. trumbulli* examined by us, a male, measured 74.0.

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SUMMARY

The mastiff bat, *Eumops perotis renatae*, described by Pirlot in 1965 and later elevated to specific status by the same author is herein regarded as junior synonym of *Eumops perotis perotis* (Schinz, 1821). Earlier reports of large *Eumops* from South America are reviewed in light of the present understanding of the relationship between *Eumops perotis* and *E. trumbulli*.

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